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1) Result of Different types of activation functions in my chosen 10 CNNs model in CIFAR100 for 20-class classification. In two lines, we can see from the table and graph that the softmax function always gives better results than the sigmoid and ReLU activation functions.

Model	Softmax Accuracy	Sigmoid Accuracy	ReLU Accuracy
ResNet50	0.2490	0.2595	0.0569
MobileNet	0.7240	0.7545	0.6220
VGG16	0.5705	0.5780	0.4230
InceptionV3	0.5975	0.6120	0.5590
MobileNetV2	0.7135	0.7030	0.6820
DenseNet201	0.7350	0.7425	0.3595
NASNetMobile	0.6475	0.6355	0.4065
Xception	0.6445	0.6470	0.5705
DenseNet121	0.7240	0.7085	0.6905

Table 1: Comparison of Different Activation Functions.

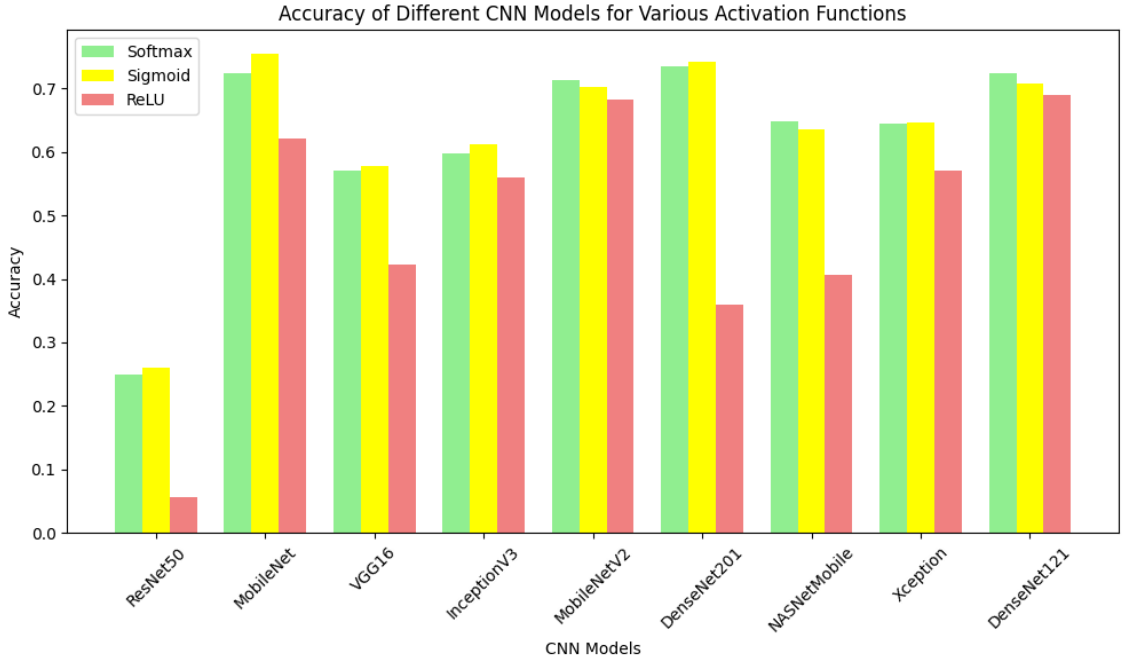

Figure 1: Compass graph of different activation functions.

2) Some CNNs and Their Kernel Types

Kernel Type	**Example CNNs**
Regular Kernel	VGG16, ResNet50, AlexNet
Deformable Kernel	DCN, ResNet with DCN, Mask R-CNN
Dilated Kernel	DeepLabV3, Dilated ResNet, WaveNet
Depth-wise Separable Kernel	MobileNet, MobileNetV2, Xception
Modified Depth-wise Separable Kernel	Xception, MobileNetV2, EfficientNet
Pointwise Kernel	SqueezeNet, MobileNet, InceptionV3

3) Different Layers' Feature Map for Each CNN Model that I choose to run on the CIFAR100 dataset.

Model	**Layer Type**	**Feature Map Description**
ResNet50	Conv1	Extracts basic features (edges, textures) with a size of (224, 224, 64).
	Residual Block	Captures complex patterns using residual learning.
	Fully Connected	Flattens feature maps for classification (1000 classes).
MobileNet	Conv1	Depth-wise separable convolution reduces complexity, output size: (224, 224, 32).
	Pointwise Conv	Combines channels using 1x1 convolutions for efficient feature representation.
	Fully Connected	Final flattened representation for classification.
VGG16	Conv1_1	Basic feature extraction, output size: (224, 224, 64).
	Conv2_1	More complex patterns detected, output size: (224, 224, 128).

	Fully Connected	Flattened feature map for classification.
InceptionV3	Conv1	Extracts features using large kernels for a wider receptive field.
	Inception Block	Multi-path convolutions capture diverse scales.
	Fully Connected	Final high-level feature map for classification.
MobileNetV2	Conv1	Depth-wise separable convolution for efficient feature extraction.
	Inverted Residual Block	Efficient convolution that combines spatial and channel information.
	Fully Connected	Output feature map for classification.
DenseNet201	Conv1	Dense connections enrich feature maps with multiple layers, output size: (224, 224, 64).
	Dense Block	Dense connections increase the representational power of the feature maps.
	Fully Connected	Final feature map for classification.
NASNetMobile	Conv1	Extracts low-level features with efficient convolutions.
	Inception Block	Multi-path convolutions capture diverse feature scales.
	Fully Connected	Flattened feature map for classification.
Xception	Conv1	First separable convolution to extract efficient features.
	Separable Convolutions	Depth-wise and pointwise convolutions to optimize feature extraction.

	Fully Connected	Final flattened feature map for classification.
DenseNet121	Conv1	Dense connections allow richer feature maps, output size: (224, 224, 64).
	Dense Block	Allows reusing feature maps from previous layers for better feature representation.
	Fully Connected	Output feature map for classification.